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July 13, 1992

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Ms. Cheryl Smith
U.S. EPA Region IV
345 Courtland Street, NE
Atlanta, GA 30365

RE: U.S. EPA Contract No. 68-W9-0005
TES VIII Work Assignment No. C04054
Olin Corporation, McIntosh, Alabama
Technical Review of the Revised Phase III Sampling and Analysis Plan, June 1992.

Dear Ms. Smith:

PRC Environmental Management, Inc. (PRC) performed a technical review of the Revised Phase III Sampling and Analysis Plan (SAP) for the Olin Corporation site in McIntosh, Alabama. The Revised Phase III SAP was prepared by Woodward-Clyde Consultants, Inc. for Olin Corporation.

Olin Corporation previously prepared the original Revised Sampling and Analysis Plan in April 1992. That document subsequently was reviewed by PRC and U.S. Environmental Protection Agency (EPA) personnel. Technical review comments were prepared and submitted to Olin Corporation on May 21, 1992. Olin prepared written responses to EPA's technical review comments and submitted those comments to EPA on June 22, 1992. PRC reviewed the Revised Phase III SAP in relation to Olin's responses to ensure that Olin has responded to all comments and that necessary revisions to the Revised Phase III SAP have been made. In some cases, Olin did not respond adequately to EPA's comments and did not comply with EPA's requests. PRC has presented below Olin's responses concerning issues it has not addressed in the SAP, as well as Olin's justification for not incorporating those issues into the SAP. The issues discussed below should not affect the proposed Phase III sampling activities. PRC recommends that EPA review the discussion presented below and that a meeting be held between EPA and PRC personnel regarding these issues.

GENERAL COMMENTS

Comment 3: EPA requested that Olin provide an assessment of the likelihood that contaminants might migrate from the plugged brine injection wells. In its response, Olin has provided a discussion in support of the unliklihood of contaminant migration from the brine wells. However, no plan or proposal is presented in the document for addressing potential contamination, and no additional ground-water monitoring in the vicinity of the brine wells is planned for Phase III activities.

Comment 5: EPA requested that Olin sample wells screened in the Miocene aquifer to confirm the presence or absence of contaminants in the deep aquifer. According to information provided in the Preliminary Site Characterization Summary (PSCS), four wells screened in the Miocene aquifer (DH-1, DH-3, WW-8, WW-12) were sampled during remedial investigation (RI) activities. Process water well WW-12 was found to contain chlorobenzene (99 µg/L) and three dichlorobenzene isomers above the contract-required quantitation limits (CRQL).

Comment 6: EPA requested that Olin provide a sampling plan for basin biota to determine the accessibility of contaminants to upper level organisms. The basin

macroinvertebrate sampling was completed during Phase II remedial investigation (RI) activities, and a full assessment will be presented in the Environmental Evaluation Technical Memorandum, which has not yet been submitted to EPA.

EPA also requested that Olin provide a proposal for additional sampling of basin sediments found to contain high levels of mercury and hexachlorobenzene to determine the maximum vertical extent of contamination. Phase II RI activities included additional sediment sampling at grid locations C2, I7, E2, OD15, and OD25.

Comment 7: EPA requested that Olin provide an assessment of the environmental effect of chlorobenzene and hexachlorobenzene because these compounds have a high potential to bioaccumulate. Olin stated that the Environmental Evaluation Technical Memorandum and the Baseline Risk Assessment report will provide an assessment of the environmental effects of these compounds.

SPECIFIC COMMENTS

Comment 8: Section 2.1.1, Page 7, Footnote. EPA requested that Olin collect soil samples in stained areas. Olin requests that EPA consider accepting the cleaning of these stained areas in lieu of sampling.

Comment 28: Section 2.2.2.1, Page 24, Paragraph 1. Because pesticide contamination is evident in the basin, EPA requested that Olin not exclude pesticides as a contaminant of concern and that Olin determine the source of the pesticide contamination. Olin attributes pesticide contamination to the Ceiba-Geigy plant, located on adjacent property north of the Olin basin. Pesticides were not chosen for analytical screening because the pesticide contamination did not originate from the Olin facility.

Comment 30: Section 2.2.2.1, Page 24, Paragraph 2. EPA requested that Olin consider hexachlorobenzene, DDT, DDE, and DDD as indicator contaminants. Olin stated that hexachlorobenzene was an indicator parameter and EPA is in error. Regarding the pesticides, Olin believes that the contract laboratory program (CLP) analyses performed during Phase I and II on the operable unit (OU) 2 sediments have adquately identified site contaminants. Phase III OU-2 basin and river sediment samples will be analyzed for target analyte list (TAL) mercury and hexachlorobenzene. Samples collected in the wastewater ditch will be analyzed for target compound list (TCL) purgeable volatiles, in addition to TAL mercury and hexachlorobenzene.

Comment 31: Section 2.2.2.1, Pages 26-28. EPA requested that Olin evaluate metals concentrations in sediments, using the EPA Region IV Sediment Screening Values for Hazardous Waste Sites (Long and Morgan, 1990). In addition, EPA stated that maximum concentrations of antimony, lead, and zinc have exceeded the screening values. Olin will provide an evaluation of metals concentrations and compare these concentrations with the EPA Region IV Sediment Screening Values in the Environmental Evaluation Technical Memorandum. The information presented in the document indicates that analysis for TAL metals, including antimony, lead, and zinc, will be done only for samples collected from the CPC (crop protection chemicals) plant, the old plant landfill, and the old plant landfill drainage ditch during Phase III sampling activities.

Comment 32: Section 2.2.2.1, Page 26, Paragraph 3. EPA requested that Olin collect a background sample within the study area to evaluate the significance of metals concentrations detected in sediments. Olin proposes to collect a backround sediment sample beyond the Olin property boundary during Phase III activities. The background location has not been selected; however, Olin will notify EPA of the location two weeks before sampling activities begin.

Comment 40: Section 3.1.1, Page 33. EPA recommended that Olin perform ground-water sampling in addition to soil and waste sampling, to better characterize the old plant landfill. Ground-water sampling is not proposed as part of the Phase III sampling activities. Olin stated that monitoring wells MP-14 and MP-15 are located directly downgradient of the landfill. These wells are sampled quarterly as part of the Resource Conservation and Recovery Act (RCRA) corrective action and compliance monitoring programs. Results of previous RCRA quarterly sampling of these wells indicate a trend toward an increase in mercury contamination. Phase III sampling activities at the old plant landfill focus on waste and soil to determine whether these media are a continuing source of ground-water contamination as is indicated by the monitoring well results.

Comment 41: Section 3.1.2, Page 33. EPA requested that Olin provide a sampling strategy to better assess potential contamination from the lime ponds, including additional boring locations and ground-water sampling. Wells that were not sampled during either RI sampling or RCRA quarterly monitoring include wells LP-1, LP-2, MP-10, and LP-4, located directly adjacent to the two lime ponds. However, the proposed Phase III sampling of the lime material in the ponds should be sufficient at this time to characterize the waste.

Comment 43: Section 3.1.6, Page 34. EPA requested that Olin provide an assessment of the potential for wind dispersion of the mercury contamination in the area of the former mercury cell plant. Olin requests that EPA provide additional information on the rationale for assessing the wind pattern over the former mercury cell plant and for the need to sample these soils. Because the area was decommissioned and paved with asphalt, Olin believes the potential for mercury emissions from the soils in this area is low to none, and therefore, Olin sees no need to conduct any additional sampling other than the proposed shallow borings.

Comment 45: Section 4.0. EPA stated that the quantitation limits for analytes detected in sediments should be at or below the effects range-low (ER-L) values (Long and Morgan, 1990). Olin proposes to use the CLP procedures used in Phase I and Phase II mercury analyses.

In addition, EPA also requested that Olin analyze sediment samples for acid volatile sulfides (AVS) and simultaneously extracted metals (SEM), as well as organic mercury, in order to provide greater insight into the bioavailability of mercury in the basin. Olin does not believe that the AVS/SEM ratio will provide any additional useful information. The fact that mercury was detected in fish tissue indicates that mercury is in a bioavailable form. Olin currently is evaluating the AVS/SEM testing procedures to determine whether they may be appropriate for Phase III basin sediment sampling.

Olin also believes that little useful information can be gained from organic mercury analyses because of the occurrence of false negatives and the fact that

mercury can be assimilated by the biota even though concentrations of organic mercury may be below detection limits.

In addition, EPA requested that Olin analyze all samples for TCL pesticides, because DDT, DDE, and DDD were present. Olin does not propose to analyze sediments for DDT, DDE, and DDD because hexachlorobenzene is a positive organic indicator for basin sediments. Olin also stated that sufficient data exist to assess the risks from these pesticides. In addition, Ciba-Geigy currently is conducting an RI of the flood plain that includes organic pesticide analyses. However, it would be beneficial to understand the extent of Ciba-Geigy's investigation in relation to the Olin basin.

Comment 51: Section 4.1.4, Page 41, Paragraph 2. EPA requested that samples collected for volatile organic analysis be transfered directly into the sample container and that they not be composited. The revised text has omitted mention that samples collected for volatile organic analysis will be placed in the sample container before composite samples are prepared.

Comment 57: Section 4.1.9, Page 45. EPA requested that the following compounds be added to the proposed list of analytical parameters: cadmium, nickel, selenium, dibromochloropropane, methylene chloride, and di-n-butyl phthalate. Olin stated that cadmium and nickel will be added to the proposed list of analytical parameters. However, methylene chloride and di-n-butyl phthalate are common laboratory contaminants and are not considered site-specific compounds. Selenium was reported above the Maximum Contaminant Level (MCL) in only one sample. That sample was reanalyzed, using Method 7741 to remove matrix interferences from chloride. The results of the second analysis indicated selenium levels below the MCL. Dibromochloropropane was reported in only one monitoring well and is not considered a site-specific contaminant.

Comment 64: Section 6.2, Page 54, Bullet 1. EPA requested that Olin comply with the seven-step decontamination procedures stated in EPA's Standard Operating Procedures and Quality Assurance Manual (SOPQAM) for Region IV for all drilling and sampling equipment that enters the borehole. Olin has stated that the seven-step decontamination procedure need not be followed for equipment that does not come into direct contact with the sample, such as augers and other drilling equipment.

Comment 81: Section 7.1, Page 70. EPA recommended that Olin clarify why both the screeing and CLP methods were used to quantify hexachlorobenzene concentrations. Olin does not clearly state the benefits of using both methods. However, it appears that the screening method for hexachlorobenzene was developed specifically for the McIntosh site and currently is being evaluated for its validity.

As previously stated, PRC recommends that EPA and PRC personnel review the issues discussed above and determine whether Olin has sufficiently justified its reasons for not addressing these issues. Please contact me if you have any comments or questions.

Sincerely,

Rachel S. Cochran

Rachel S. Cochran
Project Manager

cc: Gilda Knowles, Dynamac Corporation
Michael Jones, PRC-Atlanta
PRC File